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AN  
ADDRESS  
DELIVERED TO THE  
MEDICAL SOCIETY  
OF  
ORANGE COUNTY, NEW-YORK,  
AT THEIR  
ANNIVERSARY MEETING, JULY 7, 1812.

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BY DAVID R. ARNELL,  
President of the Society.

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Rationalem quidem puto Medicinam esse debere.

CELSUS.

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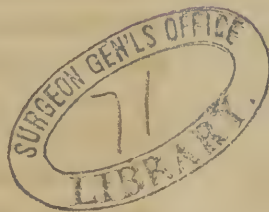
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*Medical Society of Orange County,*  
*July 7, 1812.*

“ Resolved, that the thanks of the Society be presented to the President for his Anniversary Address, delivered this day; and that a copy be requested for publication.”

Extract from the minutes,

THOMAS WICKHAM, *Sec'ry.*





## ADDRESS, &c.

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**MEDICINE** or physic, in a general and loose acceptation of the word, may be said to be coeval with any considerable exertion of the faculties of reason and judgment among mankind. In this conception of it, the most superficial observations upon diseases, or the simplest prescriptions of medicine, may be regarded as the first buds of medical science in the human mind. But if by that term we are to understand such a measure of rational study and investigation, as may be productive of scientific knowledge, the birth of medicine cannot be reckoned to coincide with the rude ages of the world, or the earliest periods of political society. To mature human reason itself, and reduce medicine into scientific forms, a certain extent of experiences, and a reiteration of them are necessary; and this foundation cannot be laid, but by the settled intercourse with men, and their holding converse together, for confirming the truth of their experiences, and the enlargement of them. Medicine, therefore, taken in a proper sense, may be concluded to have had its origin in the more social and civilized conditions of mankind; and in judging of the pretensions of nations to it as a science, it may be pre-

sumed that those governments who enjoyed peace and tranquillity, and gave protection to men of science, would be most likely to afford room and encouragement to inventions and discoveries, useful to the community, or entertaining to the minds of men.

In the early periods of history, that of the theory and practice of physic is involved in darkness and obscurity. The fabulous history of the ancients derives this art immediately from their gods; and even among the moderns, some are of opinion that it may be justly considered as of divine revelation. But we may conclude that mankind were naturally led to it from casual observations on the diseases to which they found themselves subjected; and therefore, in one sense at least, it is as ancient as the human race. At what period it began to be practised as an art, by particular individuals following it as a profession, is not known. It is not probable, that among the Egyptians, religion and medicine were originally conjoined. The sacred writer styles the physicians who embalmed the body of Jacob, *servants*; while, at the same time, their priests were in such high favour, that they retained their liberty when all the rest of the people were made slaves to the prince. What seems most probable on this subject, is, that religion and medicine came to be mixed together in consequence of that degeneracy which took place in all nations. The Egyptians, we know, came at last to be sunk in the most ridiculous and absurd superstitions; and it seems as natural for ignorance and barbarism to combine religion with physic, as it is for a civilized and enlightened people to keep them separate; and

we see that among all modern barbarians, their priests and their conjurers are their only physicians.

Our knowledge of the history of medicine among the Egyptians, is so limited, that we can say but little about them. They attributed the invention of medicine to *Thoth*, the *Hermes* or *Mercury* of the Greeks, who is obliged on many occasions to share it with *Orisis*, *Isis*, *Apis* or *Serapis*. The whole of the Egyptian physic appears to have been nothing more than a collection of the most absurd superstitions.

The Greeks had several persons to whom they attributed the invention of physic, particularly *Prometheus*, *Apollo* or *Pæan*, and *Esculapius*, which last was the most celebrated of any. The most of their physic was little else than what is now called surgery, or the cure of wounds, fractures, &c. owing in a great measure to their being a warlike people: the most of their internal diseases were cured by confinement to a spare diet, and the use of exercise; while for chronic diseases their physicians gave them wine, sometimes mingled with a little cheese, and to this was added a variety of charms, incantations, amulets, &c. which are common to all superstitious and ignorant nations.

In this way the art of medicine continued among the Greeks for many ages. As its first professors knew nothing of the animal economy, and as little of the theory of diseases, it is plain, that whatever they did, must have been in consequence of mere random trials or empiricism, in the most strict and proper sense of the word: indeed, it is evidently impossible that this or any art could originate from any other source than trials of this kind. Accord-

ingly, we find that some ancient nations were accustomed to expose their sick in temples, and by the sides of highways, that they might receive the advice of every one who passed.

The first writer of eminence, whose name is handed down to this period, is Hippocrates; he was a native of Cos, and has been properly called the father of physic—he flourished about 400 years before the Christian era. All the accounts we have, prior to this time, if not evidently fabulous, are highly conjectural. But from the time of Hippocrates, medicine, separated from philosophy and religion, seems to have assumed the form of a science, and to have been practised as a profession. It will therefore be proper to take a short and comprehensive view of his theory and practice. In his writings, we find a general principle adopted, which he terms *nature*, to which he ascribes great powers. “Nature (says he) is of itself sufficient to every animal; she performs every thing that is necessary to them, without needing the least instruction from any one how to do it.” Upon this footing, as if nature had been a principle endowed with knowledge, he ascribes virtues or powers to her which are her servants, and by means of which she performs all her operations in the bodies of animals, and distributes the blood, spirits, and heat, through all parts of the body, which, by this means, receive life and sensation. And in other places, he tells us it is this faculty which gives nourishment, preservation and growth to all things. When he comes to explain what this principle, called nature, is, he is obliged to resolve it into heat, which he says appears to have something immortal in it. As far as he at-

tempts to explain the causes of diseases, he refers much to the humours of the body, particularly the blood and bile. He treats also of the effects of sleep, watching, exercise, and rest; and all the benefit or mischief we may receive from them. Of all the causes of diseases, however, mentioned by Hippocrates, the most general are diet and air. He does not pretend to explain how those different causes produce the variety of diseases which fell under his daily observation. Some diseases he pronounced mortal, others dangerous, and others curable. He divided them into two classes, *acute* and *chronical*. He remarked four stages in every disease, viz. its beginning, augmentation, height or crisis, and declination. In examining his patients, to discover their diseases, he paid attention to their looks, their posture in the bed, their breathing, their urine, their fæces, their expectoration, and the state of their pulse. His cure consisted much in a proper diet and bathing. In acute diseases he used the lancet to considerable extent; his bleedings were large and full; and his medicines were purgatives, vomits, diuretics, and sudorifics: to this was added a large class which he called *specifics*, whose action he did not understand, and for the use of which he could give no reason beside his own experience, or that of other physicians. Upon the whole, when we attend to the state in which he found medicine, and the condition in which he left it, we can hardly bestow sufficient admiration on his judgment and understanding. His writings show him to have been a man who possessed great strength of mind, assisted by accurate observation, and his



cases are detailed with an honesty which would well become those who have followed after him.

Medicine in Greece derived considerable improvement from the labours of Praxagoras, Erasistratus, Aristotle, and Herophilus; yet the writings of Hippocrates swayed the schools and practice of physic for more than 400 years. About 284 years before Christ, a considerable revolution took place in medicine, in Alexandria, which was brought about by Serapion, the founder of the Empiric sect: he admitted only one general principle of obtaining skill in the medical art, which was by experience, called by the Greeks *εμπειρια*. From this word they took their name, and refused to be called after the founder or any other of their sect. Their name will give you a sufficient idea of their doctrines and practice, without any farther explanation. They were again divided into another sect, called Dogmatists, who asserted it was impossible to know how to cure a disease without knowing the cause whence it proceeded. The next remarkable person in the history of physic is Asclepiades, who flourished in the century immediately preceding the birth of Christ. He introduced the philosophy of Democritus and Epicurus into medicine, and ridiculed the doctrines of Hippocrates. He asserted, that matter, considered in itself, was of an unchangeable nature, and that all perceptible bodies were composed of a number of smaller ones, between which, there were interspersed an infinity of small spaces, totally void of all matter. He thought that the soul itself was composed of these small bodies. He laughed at the principle called nature, and denied the power of at-

traction in bodies, resolving the whole into matter and motion. He asserted, that the causes and termination of diseases might be accounted for from mere matter and motion; and his practice was peculiarly suited to remove imaginary causes of diseases.

The next great revolution which happened in the medicinal art, was brought about by Themison, the founder of the Methodic sect. He maintained that a knowledge of the cause of diseases might be gathered from two, or, at most, three principles; these were, stricture and relaxation, and possibly a third, which partook of both stricture and relaxation. It is asserted by some, and we must confess there is much reason for such conjecture, that the celebrated John Brown took all his ideas of sthenic and asthenic diathesis from the doctrines of the Methodists. Themison was old when he laid the foundation of the Methodic sect, and it was brought to more perfection by Thessalus, who lived under the emperor Nero. "Never was mountebank (says Pliny) attended by a greater number of spectators than Thessalus had generally about him." And this cannot be wondered at, when we consider that he promised to teach the whole art of physic in less than six months. The most skilful of all the Methodists, and he who put the last hand to it, was Soranus, who lived under the emperors Trajan and Adrian, and was a native of Ephesus. One of the most celebrated writers of antiquity, is Celsus, who lived in the time of Tiberius: he introduced but little improvement of his own into medicine, and in his writings copied so much from Hippocrates, that he has acquired the name of the Latin

Hippocrates. But he has not attached himself so closely as to reject the assistance of other writers, and his own writings form a compendious view of almost all his predecessors, and will be read by all who wish to become acquainted with the practice of the ancients, prior to the fall of the Roman empire, or to read medical Latin in its greatest purity.

Nearly 200 years after Christ lived the celebrated Galen, who is said to have written 300 books, and whose name makes such a conspicuous figure in the history of physic. Galen undertook the reformation of medicine, and seems to have been of that sect which was called Eclectic. His first attempt was to explain the writings of Hippocrates, and afterwards to compose a system of his own. He establishes three principles of the human body, the solid parts, the humours, and the spirits. The solid parts he divided into similar and organical; the humours are four, blood, the phlegm, the yellow bile, and the black bile. He established three kinds of spirits, the vital, the animal, and the natural. The original source or principle of motion in all these functions, Galen, as well as Hippocrates, defines to be nature. But when he comes to apply his first principles to the causes and cure of disorders, it is evident that his whole system was little else than a collection of speculations, distinctions, and reasonings. Yet, with all its defects and absurdities, it remained uncontradicted for a very long period. Perhaps no man ever did, or again ever will so completely and authoritatively sway the empire of medical opinion, or be more universally obeyed for the same length of time that he has been: his works and opinions were the standard of the schools until nearly the beginning of



the eighteenth century, although Oribasius, Etius, Alexander, and Paulus made considerable improvements in the practice of medicine within that period of time.

After the downfall of the Roman empire, learning and science were almost completely exterminated in Europe; man seemed to sink down into a state of barbarism, and medicine shared the same fate with the more abstract sciences. Learning in general, banished from the seat of arms, took refuge among the eastern nations, where the arts of peace continued to be cultivated. To the Arabians, during this long night of literary darkness, we are indebted for the preservation of medical science, and likewise for the description of some new diseases, particularly the small-pox. Among the most eminent of the Arabian physicians, we may mention Rhazes, Avicenna, Albucases, and Avenzoar. But of their writings, it would be tedious and unnecessary to give any account.

We are now contemplating a period of medical history, which has been, and must still continue to be of the utmost importance in reviewing the history of learning, or of the arts and sciences. Men of learning, of talents, and of industry, had long been flocking to the city of Constantinople, where their ears might no longer be dinned with the clangour of arms or the strife of tongues; they retired, wearied and disgusted, from the ensanguined field and contentious senate, where they might enjoy the repose of peace, and enter the closet of the philosopher, and the schools of science—but, even here their labours were lost, except to themselves and their pupils. Whoever entered their schools, were sworn

to the greatest secrecy, that of all they learnt, they were to reveal nothing out of their own particular circles. From this circumstance, ignorance prevailed to an alarming degree in every other part of the world. Indeed, so great had been the prevailing opposition to solid learning and science, that in China, all the ancient records were ordered to be collected, and publicly burnt, except such as related to the science of medicine. So highly has medical skill been approved of by the ancient people of Asia, that the greatest thing which their gods have been said to produce, was a learned physician.

In the year 1451, Mahomet II. besieged Constantinople, which yielded to the conqueror in 1453, and in her fall poured forth her fugitive philosophers and learned men to propagate and revive learning in the western world. For a long time preceding, science had been gradually awakening as it were from the dead, and that bright day of truth and knowledge, whose meridian beams now illumine our western hemisphere, had begun to shine on benighted Europe. Various causes contributed to revive and promote a taste for medical learning. Those physicians who travelled into Rome, supposed that they possessed the whole arcana of medical knowledge; they there found the writings of Galen in the Greek language, and considered themselves as no longer bound by the oaths of secrecy which they had taken in Constantinople, and were at full liberty to spread their knowledge through the world. And to this may be added, the encouragement which was given to learning and learned men, and the establishment of public schools and universities in Florence and Rome, under the pontificate of

Leo X. as well as the favours which were bestowed upon eminent physicians by the family of the Medici: All these combined circumstances tended to diffuse a spirit of research and improvement, as well as general literature and science, and ushered in those glorious days, when

Notes of learning through "each temple rang,  
"A Raphael painted, and a Vida sang."

At this period we may date the revival of learning, which we so frequently read of as having taken place in the beginning of the fifteenth century. The medical system of Galen was again restored, and began generally to prevail. It is easily to be conceived, that, circumstanced as the public teachers of medicine were, that pride, love of distinction, and desire of fame, should have a powerful effect on their minds, and prompt them to form new systems, and pretend to new discoveries.

Early in the sixteenth century, arose that eccentric genius, Paracelsus, who called himself Aureolus Philippus Theophrastus Bombastus Paracelsus de Hohenheim: he was elected professor of medicine in Basil, in 1527; he soon became eminent by the number, respectability, and attachment of his pupils, as well as the many extraordinary cures in the leprosy, dropsy, itch, and particularly in the venereal disease, which he performed by the prudent use of mercury and opium, whose virtues, till then, were very little known, or unskilfully applied. To the chemical zeal with which he tortured mercury, we are indebted for the far greater proportion of the preparations of that valuable medicine which are

now in use; some writers have called him the "eternal tormentor of mercury." While he was teaching, he pretended to his pupils, that there was a regular agreement between the planets and the various parts of the human body. Our modern almanac makers, who possess a knowledge of astronomy barely sufficient to calculate the various eclipses of the sun and moon, but are entirely ignorant of the origin of the government of the planets, still retain them in their calendars; by this means, they yet have a powerful influence on the minds of ignorance, superstition, and credulity. In the course of his teachings, Paracelsus laboured out, what is now called the chemical theory of physic; he said, if God would not impart to him the secret of physic, it was lawful to consult the devil. With great solemnity, while lecturing in his chair, he burnt the writings of Galen and Avicenna; and he considered the seven planets as equally corresponding with the seven metals or minerals. With such and similar opinions, the effects of a heated and disordered imagination, which depended more on revelations from departed and evil spirits, than the results of sound and clear experiment, he raised himself to consequence, and obtained a reputation for a while, regarded as the fruit of superior intelligence, and a divine agency. Perhaps his celebrity is to be attributed to the ignorance and superstition of his contemporaries more than the successful cures which he performed by means of his empirical art. He, however, laid the foundation of a chemical system, which attracted much notice, and excited a violent contest with the followers of Galen. The efficacy of the remedies employed by Paracelsus and his

disciples, and the bold and confident terms in which their virtues were extolled, procured with many a reception of his system, and for a long time supported its popularity and fame.

About this time the discovery of the circulation of the blood began to be generally received, which, together with that of the receptaculum chyli, and ductus thoracicus, gave a heavy blow to the Galenic theory. In the destruction of this theory, the new mode of philosophising, introduced by lord Bacon, exhibited the futility of the numberless hypotheses which are found in the system of Galen, and excited a disposition to observe *facts*, and make *experiments*.

At the beginning of the seventeenth century, the contest between the Galenicals and Chemicals was carried on with the utmost animosity and indecorum. The influence of the writings of Gallileo, aided by the discovery of the circulation of the blood, introduced mathematical reasoning into the doctrines of medicine. The progress made about this time in the knowledge of the organic structure of animals, which was greatly facilitated by an acquaintance with the circulation of the blood, had extended the application of mechanical philosophy, in order to explain the phenomena of the animal economy. The agency of the nerves or moving powers of animals, was at that time so little known or understood, that physicians, universally, whether Galenists, Chemists, or Mathematicians, considered the state of the fluids as the cause of diseases, and the medium for the operation of medicines. While the followers of Galen were daily losing ground from the circumstances which



have been stated, the Chemists gained some accession of strength from the doctrine of the humoral pathology. Chemical reasoning was readily adopted, to explain the various acrimonies which were supposed to infest the circulating mass, and thereby to give origin to disease. On this ground, the use of stimulating, cordial, and alexipharmic or sweating medicines, became very fashionable in Europe, in the latter half of the seventeenth century.

This doctrine, which exhibits the last glimmering of the Chemical sect, attained its utmost height, and was taught and practised with the greatest applause by the celebrated Sylvius De Boe, professor of medicine in the University of Leyden, who continued for many years the medical oracle of Europe, and gave an eminent degree of eclat to the seminary to which he belonged. With this physician, acidity formed the principal source of morbid affections; he extended and supported his doctrines by every analogy that the learning of that period, or the utmost ingenuity could devise. Agents adapted to correct or expel this acid acrimony, were exalted into universal remedies, and supplied every intention of cure.

To oppose the doctrines of the Sylvian school, which were then taught, and which could not fail to do mischief when carried to large extent, required the powers of a great and original mind. For this purpose, the illustrious Sydenham was eminently suited. The sagacity of this physician led him almost by a seeming intuition, to discern and obey the dictates of nature, and to afford her every proper assistance, without urging her to hazardous and unnecessary efforts. The effects of this revolution in

medicine, were immediately seen and regarded in the treatment of diseases, where, instead of the hot alexipharmic treatment, was substituted blood-letting, and a cool antiphlogistic regimen, with a view to unload the oppressed habit, and reduce the excessive action which was prevailing in the blood vessels.

At this time, the application of mathematical reasoning to medical theory had attained its greatest height. The Mathematicians were alike hostile to the Galenists and Chemists. With equal aversion they discarded the qualities, temperaments, elements, concoctions, and crises of the Galenists; the salts, the sulphur, the mercury, the acids, alkalies, effervences, fermentations, ebullitions, and deflagrations of the Chemists. Instead of such objects as these, the Mathematical Pathologists endeavoured to direct the public attention to mechanical tension and relaxation, to true and spurious plethora, to obstruction and error loci, to excessive and deficient motion of the fluids, and to their lentor, tenuity, and dissolution. Flushed with their success in astronomical calculations, the Mathematicians confidently believed they would be able to subject the province of medicine to their extensive empire. The Chemists of this day had little to urge against the claims of these bold invaders. Their loose, visionary, and capricious doctrines (for such was undoubtedly the chemistry of that period), could make no successful opposition to the axioms, postulates, propositions, lemmas, problems, theorems, demonstrations, corollaries, and calculations, with which the Mathematicians were constantly armed when they entered into controversy. The laborious

calculations made by Borelli and Bellini of the force exerted by the heart in propelling the blood, and by the stomach in the digestion of food, are signal examples of the delusion which then occupied the most respectable minds. But no person at this period was more carried away than the celebrated Dr. Pitcairn, who supposed that medical principles might be supported by mathematical reasoning, so clearly, as to defy the attacks of the sophist; and which would not be subject to the fluctuation of opinion or prejudice; and after a long parade of geometrical forms, he supposed that he had arrived at the *ne plus ultra* of medicine. This system was once taught by learned men, and amidst all its inconsistencies and extravagances, it formed an important step towards improvement, and has been honoured with the names of a Borelli, a Boerhaave, and a Newton.

Thus stood the science of medicine at the beginning of the eighteenth century; but at this time, which may be considered as an auspicious period, every part of science began to assume a more correct and improved aspect. The professors of medicine, profiting by the vast labours and learning of those who had gone before them, began early to improve on their systems: divesting themselves of that sectarian zeal which their predecessors had always indulged, they began to *compare*, and from thence to construct such new theories as were speedily to appear. Accordingly, it was not long before three new and considerably different systems were presented to the world, in the writings of Stahl, Hoffman, and Boerhaave.

The first writer of eminence, in the beginning of



this century, was John Ernest Stahl, professor of medicine at Halle, in Saxony. He was highly distinguished for his improvements in chemistry; and the traces of his system, which I shall briefly explain, are still to be found in some writings possessing a considerable degree of authority.

The fundamental principle of this system is, that the rational soul presides over the body, and influences all its actions, both in health and disease. In all ages physicians have supposed there was a power or faculty in the animal economy, which enables it to resist injuries, and remove whatever may be hurtful or prejudicial when taken into the stomach. This power, by many, was vaguely termed *nature*, but in the writings of Stahl, was termed *vis conservatrix et medicatrix naturæ*, which has been long celebrated in the schools of medicine. Stahl founds his system on this principle, that this power of nature is nothing more than a faculty of the rational mind or soul. On many occasions he supposes the soul may act independently of the body, and that without any physical necessity arising from a particular state. The soul, merely in consequence of its intelligence, perceiving the application of noxious powers, or the approach of disease from any cause, immediately excites such motions in the body, as are calculated to obviate the hurtful or pernicious effects which might otherwise take place. He sometimes mentions two opposite principles in the human body; one constantly tending to dissolution and decay, the other to life and health: the former founded on the elementary composition of the body, and the latter depending on the energy of the mind or soul. By means of the nerves, the soul is ex-

tended to every part of the body, and when these were obstructed, disease is the inevitable consequence. A plethora or lentor of the blood, therefore, by obstructing this passage of the soul through the nervous system, is the foundation of his theory of fever; and, having this in view, directed the whole of his practice. It can easily be seen how some parts of his system are interwoven with those of Cullen and Darwin; and, although it may appear fanciful and absurd, yet there is so much of intelligence and design in the animal economy, that many physicians, whose names will be handed down to posterity as great men, have imbibed the principle, and in a great measure regulated their practice thereby.

The next who wrote largely on medicine, and whose works are yet the foundation of the practice of some of the older physicians of our day, was Herman Boerhaave; he was professor of medicine in the University of Leyden: in all respects he deserves to be considered as one of the greatest men that ever adorned the medical profession. He possessed a vast range of information, and particularly excelled in anatomy, chemistry, and botany. Endowed by nature with a powerful, logical, and systematic mind, he seemed to be designed to clear away the rubbish and error with which he found medical learning overgrown; to collect knowledge from every source, and present it to the world in a clear, consistent, and luminous state of arrangement. His *Aphorisms*, or practical work, with all their imperfections, contain more medical *learning* than any other book of the same size now extant.

The most prominent feature in the Boerhaavian

system, is the attempt to explain the phenomena of the human economy, in health and disease, upon mechanical principles. Under the impression of such opinion, he considered the body chiefly as a hydraulic machine, composed of a conic, elastic, inflected canal, divided into similar lesser canals, all proceeding from the same trunk, which being at last collected into a retiform contexture, mutually open into each other, and send off two orders of vessels, viz. lymphatics and veins; the former terminating in the different cavities, and the latter in the heart: that these tubes are destined for the conveyance of the animal fluids, in the circulation of which he supposed life to consist, and in the free and undisturbed motion of which he judged health to depend. He therefore believed obstruction to be the proximate cause of most diseases; and this obstruction he supposed to proceed either from a constriction of the vessels, or a lentor in the blood.

Frederick Hoffman was the colleague and rival of Stahl in the University of Halle, and a most learned and voluminous writer. For more than fifty years he flourished as a practitioner and author, enjoyed a splendid reputation, and added greatly to the mass of medical science. He set himself to cultivate and improve what Boerhaave had neglected; he diligently undertook to explore the functions and diseases of the nervous system, and wisely concluded that noxious causes much more frequently affect the solid moving powers, than the fluids of the animal body. According to him, atony and spasm are the great source of disease; and he proceeded so far as to maintain, that all internal disorders are to be ascribed to some preternatural affection of the living

solid. He supposed the noxious cause producing fever, to operate first on the living solids, producing a general spasm in the nervous and fibrous system, beginning in the external parts, and proceeding towards the centre: in consequence of this, a contraction of the vessels of the extremities must take place, impelling the circulating fluids in an increased ratio on the heart and lungs, which stimulating these organs to increased action, the fluids are thereby repelled towards the extremities, and thus the phenomena of fever are produced.

Hoffman's Theory of Fever deservedly excited much attention, contained a great deal of truth, and formed a distinguished era in the history of medical science; although his opinions on the subject of fever are rapidly falling into disrepute, and his system has gone down to the "tomb of the capulets."

We are now brought down to the celebrated Dr. Cullen, professor of medicine in the University of Edinburgh. He assumed, and taught for a number of years, the general principles of Hoffman. He endeavoured to extend the application and uses of this principle as far as possible, and for this purpose, he expunged certain hypothetical doctrines of the humoral pathology, which Hoffman had suffered to remain, with a view to depreciate the value of his system.

According to the hypothesis embraced by Dr. Cullen, the brain, with all its ramifications combined to form the nervous system, is the primary organ of the human body, whose different conditions constitute the various states of health and disease. In pursuance of this hypothesis, the circulation of the blood, instead of being the principal of

the vital functions, as in the Boerhaavian system, occupies only the second degree of importance in the animal economy. He supposed it evident, that the nervous power, particularly in the brain, is in different degrees of mobility and force. To these different states, he applied the terms excitement and collapse. His opinions concerning the nature of fever have excited much controversy in the medical world. His doctrine of fever is explicitly this: the remote causes are certain sedative powers, applied to the nervous system, which diminish the energy of the brain, and produce a *debility* in the whole of the functions, particularly in the action of the extreme vessels. This debility proves an indirect stimulus to the sanguiferous system, whence by the intervention of the cold stage and *spasm* connected with it, the action of the heart and larger arteries is increased, and continues so until it has the effect of restoring the energy of the brain and extreme vessels, and consequently their action, and thereby overcoming the spasm affecting them; upon the removing of which, sweat, and other marks of the relaxation of excretories take place.

As Hoffman's Theory of Fever evidently produced that of Cullen's, it is necessary to ascertain the points of difference between them. According to Hoffman, the first effect of the remote cause of fever is spasm. Cullen introduced a previous link into the chain of effects: he contended that the first effect of the remote cause was debility; to this debility he attributes the spasm, and to the spasm the re-action of the heart and arteries. According to Hoffman, the spasm belongs to the class of motions which he calls hurtful; but Cullen presumes it to be



salutary, and therefore, in the language of the schools, ascribes it to the *vis medicatrix naturæ*.

Dr. Cullen's Theory of Fever was received for a long time with great applause, and maintained its ascendancy both in Europe and the United States. Many, however, at the present day, consider it as untenable. The co-existence of atony and spasm in the same vessels, is regarded by some as an insuperable difficulty, and his introduction of the *vis medicatrix naturæ* is liable to such objections, that many others consider it as no better than a confession of ignorance. It would be injustice, however, not to say that his merits are extensive and universally acknowledged. He was a faithful and diligent collector of facts, and he certainly excelled in methodical arrangement. But it may be said of him as he said of another, that he was more successful in demolishing the systems of others, than he was in erecting his own.

The next system which demands our attention in the order of time, is that of Dr. John Brown, of Edinburgh. This original, eccentric, unfortunate man, framed a physiological and pathological theory, which, amidst great errors, inconsistencies, and contradictions, contains many vigorous conceptions of nature. He assumed, as the foundation of his system, the existence of an unknown principle, on which, when acted upon by stimuli, all the phenomena of life, health, and disease depend, and which he termed excitability. Excitability produces no effect, or rather, does not exist, unless exciting powers or stimuli are applied; for if they are entirely withdrawn, death as certainly ensues as when excitability is consumed by the excess of them:

life is therefore a *forced state*. Diseases he divided into two classes, sthenic and asthenic, or such as arise from increased or diminished excitement. In a word, the basis of Dr. Brown's theory seems to be this: in whatever state of the body, whether healthy or diseased, there always exists either too strong or too weak an excitement. Hence, there are only two species of disease, two methods of treatment, and two kinds of medicinal agents. With all his faults, it cannot be denied that the praise of genius and originality, in an eminent degree, belongs to Dr. Brown. The simplicity, comprehensiveness, as well as novelty of his system, gave it a very seducing appearance, and contributed greatly to its prevalence. One of the greatest excellencies of it is, that it gives a very forcible definition of direct and indirect debility, and strongly impresses on the mind, the impropriety and danger of going suddenly from one extreme of excitability to another.

Near the close of the eighteenth century, a new medical theory was presented to the world by Dr. Erasmus Darwin, of Derby, in England. According to his theory, there is in every part of the animal system a living principle, which he terms the sensorial power, which is capable of being acted upon in four different ways; or it possesses four different modes or principles of action, which in their active state he termed irritation, sensation, volition, and association; but in their passive state are termed irritability, sensibility, voluntariness, and associability. He accounted for diseases, by supposing that a torpor took place in some part of the animal economy, producing an expenditure of some one of these powers, and a proportionate increase of others;

and these being catenated together, some of which links being broken, produced a retrograde action in some vessels, associating a morbid action in others; in this way exciting fever and other derangements of the human system. The number of compartments which belong to his system, the cycles and epi-cycles, and the variety and intricacy they bear to each other, make it difficult for me to comprize, within a short compass, such a view of his theory as can do justice to the ingenuity and learning of the celebrated author. The observations, conjectures, and reflections which abound in this work must be greatly admired. The most competent judges concur in pronouncing it the ablest work of the eighteenth century. In collecting and arranging the facts which belong to animal life, and unfolding the influence of morbid associations, which involves the essence of diseases, the author undoubtedly excels all former writers. Still, however, his work must be allowed to labour under great faults and radical deficiencies: in many instances, he gives the rein to his imagination, and suffers fanciful speculations to usurp the place of facts and fair reasoning.

Among living authors, our learned and excellent countryman, Dr. Benjamin Rush, of Philadelphia, stands in the first rank of medical theorists in the United States. His doctrine of the proximate cause of fever is the result of a long, vigilant, and enlightened attention to the phenomena of febrile diseases, and to the various systems which he was enabled to survey. His doctrine of fevers makes their proximate cause to depend on a convulsed and morbid state of the sanguiferous system, but more



particularly in the arteries. His mode of treatment is chiefly directed to the reduction of excessive, and the liberation of oppressed actions, by blood-letting, and other analogous means of depletion; or to the support of feeble action, by appropriate stimulants, and to the transfer of morbid action, of whatever kind, from the vascular system, to parts less essential to life. His writings will be read by all who are pleased to see a vein of piety and benevolence running through a medical system. And his practice is followed in a greater or less degree by the regular physicians of his native country.

We shall here close our history of medicine. If we had time to retrace our steps, and to show how one system grew out of another, to take a view of the progress of physic from a state of nature and rudeness, to the experience and improvement on which we now find it, and to observe how circumstances have governed the revolutions of medical theories, would be a pleasant and an useful task; but time will not permit us.

Upon a review of the whole, it will be seen that notwithstanding the advantages which have been bestowed upon medicine, its progress has not equalled the sanguine expectations formed by many. Although nearly coeval with the existence of mankind, and demanding attention in every stage and condition of human life, the science of healing maintains a struggle with difficulties at every step. Like all other knowledge derived from observation and experience, that of medicine, though continually progressive, is subject to perpetual revolution. This tardiness, therefore, will excite no surprise in such as consider the mystery which still envelopes the

principle of animal life, the labour of watching the operations of nature, the difficulty of discriminating truth from falsehood, and the small stock of genuine and undisputed facts, which all the wisdom and observation of ages have been able hitherto to collect. There is no species of knowledge which requires more steadiness of principle, and harmony of opinion, than the practice of medicine; there is none in which speculation and action are more intimately connected, where error is of more immediate and fatal consequence, or where a fluctuation of the mind is attended with more embarrassment and distress. Yet medicine abounds with schisms and controversies; and in the present imperfect state of knowledge, to hold doctrines and adopt practices, beset with the fewest errors, constitutes the highest attainment within the reach of the human mind. That much farther and more satisfactory light may be expected to break in upon us at no great distance of time, on many points now involved in darkness and obscurity, can hardly be doubted. But the subject is still greater than our exertions, and must for ever mock the efforts of the human race to exhaust it. We may well compare it, as lord Bacon did natural philosophy, to a pyramid; its basis is indeed the history of nature, of which we know a little, and conjecture much; but its top is without doubt hid high among the clouds. It is the work which God worketh from the beginning to the end; *infinite and inscrutable!*

THE END.





Med. Hist.

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